

TN Department of General Services

Metro Center - Labor and Workforce Development

Permit Application Date: 06/17/2015

New Permit No. - 970452P/19-0114-01

The equipment consists of a One (1) emergency generator (755 hp) subject to NSPS Subpart IIII

Heat-Input cap. (MMBtu/hr) =

Engine-Output cap. (hp_{out}) = 755.0

Actual Emissions from EPA Certification Testing and AP-42, Table 3.4-1, with 500 hours of limited operations

The NSPS standard is from § 60.4205(a), Table 1. The actual emissions are based on manufacturers certification and AP 42 Emit Factors.

The actual emissions for SO₂ are from AP-42 Table 3.4-1.

Based on 500 hours of annual operation: 0.25 ton-hr/lbs-yr = (500 hr/yr) X (ton/2000 lbs)

The conversion from "g/Kw-hr" to lbs/hp-hr is accomplished as follows:

$$\text{CO: } (11.40 \text{ g/KW-hr}) \times (1.0 \text{ lbs} / 453.6 \text{ g}) \times (1.0 \text{ KW-hr} / 1.341 \text{ hp-hr}) = 0.01874 \text{ lbs/hp-hr}$$

NSPS Standard			NSPS Standard			Allowable Emissions		
Emit	result		Emit	standard		Emit	standard	
Emit	=	g/KW-hr	Emit	=	lbs/hp-hr	Emit	=	lbs/hp-hr
PM:	=	0.54	PM:	=	0.00089	PM:	=	0.00089
SO ₂ :	=	n/a	SO ₂ :	=	n/a	SO ₂ :	=	0.00001
CO:	=	11.40	CO:	=	0.01874	CO:	=	0.01874
VOC:	=	1.30	*VOC:	=	0.00214	VOC:	=	0.00214
NO _x :	=	9.20	*NO _x :	=	0.01512	NO _x :	=	0.01512

The following represents allowable emissions

Emit	E.F.	Power Output			result	Convert	Result			
Emit	=	lbs/hp-hr	X	hp	=	lbs/hour	X	ton-hr/lb-yr	=	ton/year
PM:	=	0.00089	X	755.0	=	0.67	X	0.25	=	0.17
SO ₂ :	=	0.00001	X	755.0	=	0.01	X	0.25	=	0.00
CO:	=	0.01874	X	755.0	=	14.15	X	0.25	=	3.54
*VOC:	=	0.00214	X	755.0	=	1.61	X	0.25	=	0.40
NO _x :	=	0.01512	X	755.0	=	11.42	X	0.25	=	2.85

The following represents actual emissions from EPA certification

Emit	E.F.	Power Output			result	Convert	Result			
Emit	=	lbs/hp-hr	X	hp	=	lbs/hour	X	ton-hr/lb-yr	=	ton/year
PM:	=	0.00013	X	755.0	=	0.10	X	0.05	=	0.00
SO ₂ :	=	0.00001	X	755.0	=	0.01	X	0.05	=	0.00
CO:	=	0.00079	X	755.0	=	0.60	X	0.05	=	0.03
*VOC:	=	0.00013	X	755.0	=	0.10	X	0.05	=	0.00
NO _x :	=	0.00915	X	755.0	=	6.91	X	0.05	=	0.35